Before the

Maryland Public Service Commission

Case No. 8980

Testimony

of

Frederick John Meyer

on Behalf of

Reliant Resources, Inc.

December 5, 2003

TESTIMONY OF FREDERICK JOHN MEYER
ON BEHALF OF RELIANT RESOURCES, INC.

I. INTRODUCTION

Q: PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

A: My name is Frederick John Meyer. I am Vice President of Regional Transmission Organization Activities for Reliant Resources, Inc. ("Reliant"). My business address is 1000 Main Street, Houston, Texas 77001. My education and professional qualifications are set forth below.

Q: PLEASE DESCRIBE YOUR PROFESSIONAL AND EDUCATIONAL BACKGROUND AND EXPERIENCE.

A: I have spent 32 years working for Reliant Energy or its predecessors. I worked for over 25 years for the electric utility, Houston Lighting & Power Co. ("HL&P") in various positions including Manager of Engineering Design and Development, General Manager Energy Control and Dispatching, General Manager of Gas and Oil Plant Operations, General Manager Engineering, and General Manager Transmission Operations and Planning.

In addition, I have held positions for Houston Industries Energy (International) as Vice President of Operations, for Reliant Energy Power Generation as Vice President of Commercial Development and my current position with Reliant Resources.

Currently I serve as a board member of the North American Energy Standards Board ("NAESB") and the Electric Reliability Council of Texas ("ERCOT") and am a member of the Stakeholders Committee for the North American Electric

Reliability Council ("NERC"). I helped set up the commercial standards organization which evolved into NAESB, led an ERCOT stakeholder group in the design of the original ERCOT wholesale market, served on the Technical Advisory Committee of ERCOT ("TAC") for eight years, two years as Chairman, and have previously served on the Planning Committee, the Operating Committee, and the Market Committee at NERC.

I earned a Bachelor of Science in Electrical Engineering in 1970 from Lamar University and a Master of Science degree in Electrical Engineering from the University of Houston in 1980. I am a Registered Engineer in the State of Texas.

Q: HAVE YOU PREVIOUSLY TESTIFIED IN FEDERAL OR STATE COMMISSION PROCEEDINGS?

A: Yes. I have made appearances in technical conferences before the Federal Energy Regulatory Commission ("FERC") on RTO design, market design, transmission interconnection policies, congestion management design, and RTO/ISO operations. I also submitted testimony to FERC regarding PJM's local market power mitigation methodology and its effect on Reliant's chronically cost capped units in the PJM region.

I have testified numerous times before the Texas Public Utility Commission ("PUCT") in transmission line need determinations, tariffs for qualified facilities, transmission access, interruptible load sales, economy power sales, standby power arrangements, and fuel reconciliation hearings. All of this testimony was done while working for HL&P on their behalf.

In addition, I have testified before the PUCT regarding the justification of the ERCOT ISO and its protocols that apply both to the market and the ISO operation. I have testified before the Nevada Public Utility Commission on generation contracts on behalf of Sierra Pacific Corporation. Finally, I have provided expert opinions and engaged in discussions before the Florida Public Service Commission and its Staff at various technical workshops.

Q: PLEASE DESCRIBE RELIANT FOR THE RECORD.

A: Reliant has its principle place of business at 1000 Main Street in Houston, Texas. Reliant owns and operates unregulated electric generation facilities; typically either exempt wholesale generators or qualified facilities. Reliant, through various subsidiaries, owns substantial generation assets in the PJM control area. Reliant Energy Services, Inc., a subsidiary of Reliant Resources, Inc, is the PJM member. Reliant is also a competitive retail supplier serving customers in certain parts of the PJM control area.

Q: WHAT IS THE PURPOSE OF THE TESTIMONY YOU ARE PRESENTING IN THIS CASE?

A: I am testifying in support of Reliant's Regional Reliability Commitment ("RRC") proposal, as described in the testimony of Mr. Bruce Bleiweis. I will discuss why the RRC is a reasonable market-based and forward-looking approach to resource adequacy.

II. SUMMARY

Q: PLEASE SUMMARIZE YOUR CONCLUSIONS.

A: The Mid-Atlantic Conference of Regulatory Utilities Commissioners ("MACRUC") was correct in its January 10, 2003 assessment to FERC on Standard Market Design that the PJM ICAP market "must eventually be replaced." Resource adequacy is best addressed on a regional basis. The best course of action for the Commission would be to adopt the RRC as its preferred methodology and support the RRC at the various regional stakeholder proceedings. In this manner, the Commission has the opportunity to take a leading role in the development of a region-wide resource adequacy model and stimulate the process toward a solution.

In considering a well-functioning resource adequacy model, policymakers should ensure that the model has the following characteristics: 1) a sufficiently forward-looking design; 2) elimination of significant barriers to entry; 3) enforceability to ensure that there are no free riders; 4) utilization of asset-backed and deliverable resources that are able to produce energy (or not consume energy in the case of load acting as a resource), including existing and potential new resources; and 5) accommodates retail access programs. These design features are generally similar to those made by MACRUC in their January 10, 2003, comments to FERC regarding resource adequacy. Reliant's RRC model is consistent with these principles and utilizes a market-based auction mechanism to achieve resource adequacy.

III. DEFINING RESOURCE ADEQUACY

Q: WHAT IS RESOURCE ADEQUACY?

A: Resource adequacy can be viewed from a short-term (i.e., operating margin) and long-term (i.e., planning margin) perspective. On a short-term, or day-to-day basis, resource adequacy is best viewed as a means of ensuring that there are sufficient resources online to meet projected load for the next hour or day given a reasonable level of contingencies. To ensure resource adequacy in the hourly and day-ahead markets, the control area operator must procure sufficient energy and ancillary services to meet the forecasted load plus operating margin to cover unanticipated demand or loss of supply in order to maintain the reliability of the operating system.

A long-term view of resource adequacy looks at the market on a forward-looking basis and includes the planning margin. This long-term view is based on future supply and demand conditions and seeks to determine whether enough resources are available to meet projected load and cover the various contingencies (*e.g.*, expected and unplanned outages) and load forecast inaccuracy, such as weather uncertainty and unexpected load growth, that exist over a reasonable time frame in the future. As discussed in this testimony, resource adequacy refers to the process of ensuring sufficient system resources are available on a long-term basis to meet projected peak demand and provide sufficient reserves over and above projected peak demand to ensure reliable service.

Q: IN THE SUMMARY ABOVE YOU IDENTIFY CERTAIN DESIGN ELEMENTS THAT SHOULD BE INCORPORATED INTO ANY

RESOURCE ADEQUACY MARKET DESIGN. PLEASE DESCRIBE WHAT "FORWARD LOOKING" MEANS AND WHY IT IS IMPORTANT THAT THE CAPACITY MARKET DESIGN BE FORWARD LOOKING.

A: The term "forward looking" means that the adequacy requirement is designed to ensure resource adequacy in some future year. Ideally, the forward year (or "target year") should be established generally consistent with construction lead times for new generation. This has two key benefits that promote efficiency in capacity markets. First, the forward requirement introduces market signals in the form of capacity payments that permit market participants to respond to changes in supply and demand in a timely fashion. A resource adequacy mechanism that does not provide the opportunity for new entrants to rectify an imbalance between supply and demand based on known and reliable price signals cannot meet this goal and results in unnecessary capacity market volatility. Second, if the forward year is consistent with generation construction lead times, then new entry can participate in the auction thus mitigating any potential market power concerns in the capacity market. In essence, the forward requirement removes barriers to entry and allows a capacity auction to be held without the need for unnecessary regulatory intervention in the form of price caps on the auction.

Q: DESCRIBE WHAT YOU MEAN BY ELIMINATING SIGNIFICANT BARRIERS TO ENTRY.

A: A barrier to entry exists when potential resources or suppliers are unable to enter the market because of certain market designs or requirements, including market rules. A barrier to entry may create the opportunity for an existing market participant to exert market power. In creating a properly designed resource adequacy mechanism, a capacity market should procure capacity in a sufficiently forward manner to permit new resources to participate in the market and even set the market-clearing price when needed. Failure to do so creates a significant barrier to entry which may produce the potential for existing resources to exert market power in the capacity market and may increase the need for price capping in the capacity market. By adopting a forward-looking design that eliminates this barrier to entry, participants and regulators can rely on market-forces to incent appropriate behavior and eliminate the need to utilize price caps.

Q: PLEASE DESCRIBE WHAT YOU MEAN BY AN "ENFORCEABLE" DESIGN TO ENSURE THAT THERE ARE NO FREE RIDERS.

A: A properly designed resource adequacy model will ensure that sufficient capacity is procured to meet peak demand plus reserves for all load serving entities ("LSEs"). Otherwise, an LSE that believes the region has sufficient capacity to ensure reliable service has the incentive to "free ride" on the capacity of others rather than procure sufficient reserves to meet its own load. If enough LSEs adopt this approach, reliability will be jeopardized. A reasonable method to enforce this requirement upon LSEs is to have PJM take the role as the clearinghouse for resource adequacy. In other words, permit PJM to arrange for the capacity necessary for resource adequacy on a system-wide basis. Under this design, LSEs do not have the option to be resource inadequate. Rather, the RTO arranges for the regional capacity need and allocates the costs to all LSEs serving load in the region based on the individual LSE's load ratio share of total regional load. Ensuring that all participants share this responsibility eliminates the free rider problem and the need for penalties against LSEs that may not comply.

Q: PLEASE DESCRIBE THE IMPORTANCE OF "ASSET-BACKED AND DELIVERABLE ASSETS" IN A RESOURCE ADEQUACY MODEL.

A: Resource adequacy is about having resources available to meet peak demand with sufficient reserve capacity to handle contingencies that may arise. As such, only verifiable generating resources and demand response should be counted toward meeting the requirement. Moreover, because resource adequacy is about tangible resources, it is critical that those assets be "deliverable" to the loads that are relying on them. Asset-backed and deliverable assets provide the assurance that there is sufficient "iron on the ground" available to the market.

Q: PLEASE EXPLAIN HOW A RESOURCE ADEQUACY MODEL WILL ACCOMMODATE RETAIL ACCESS PROGRAMS.

A: A properly designed resource adequacy model, such as the RRC model, will promote a robust retail competitive market by:

1. Allowing retail providers to fulfill capacity obligations at known prices three years forward. This in turn allows known supply costs to be included in retail customer price offerings. Removing supply cost uncertainty associated with procuring adequate capacity for LSEs will create a level retail playing field.
2. The RRC model will avoid the creation of new stranded costs for utilities since capacity is procured for the entire region in the most cost effective manner without the need for long-term contracts. Allowing individual utilities to construct capacity to meet their own resource adequacy requirements may

result in the creation of new stranded costs if the cost of constructing that capacity later exceeds market clearing prices.

3. A central procurement approach will reduce creditworthiness concerns on the part of retail service providers that may not be able to contract bilaterally due to their credit situation.

Therefore a forward-looking resource adequacy model, such as the RRC model, can eliminate much of the uncertainty faced by LSEs in a competitive retail market by addressing the need for adequate capacity procurement, elimination of new stranded costs, and creditworthiness concerns.

Q: DO YOU RECOMMEND A MODEL THAT CONTAINS THE DESIGN ELEMENTS DESCRIBED ABOVE?

A: Yes. Reliant's RRC model, as described by Mr. Bleiweis, is consistent with these design elements.

IV. THE RRC IS A REASONABLE APPROACH TO RESOURCE ADEQUACY

Q: ARE THERE PERFORMANCE INCENTIVES TO ENSURE RESOURCE COMPLIANCE WITH THE AUCTION RESULTS?

A: Yes. Resources selected in the auction have an obligation to bid their power into the appropriate market in the target year. If the resource fails to comply with the capacity obligation when called upon, it will not receive the RRC capacity payment for the period of time it is not committed to the market. In addition, resources selected in the RRC auction will be subject to existing rules and regulations, including FERC's Market Behavior Rules (105 FERC ¶ 61,218

(2003)). Should a resource act in a manner that is inconsistent with the applicable rules, the RTO may alert FERC or file a complaint at FERC. FERC would then have the option of deciding on a penalty including the revocation of market-based rate authority, additional or new restrictions regarding the resource owner's code of conduct, the disgorgement of profits, or other administrative penalties. These potential penalties provide significant incentives for resources to ensure they are available to the market.

Q: SHOULD THE RRC INCLUDE ADDITIONAL PUNITIVE PENALTIES FOR NON-COMPLIANCE?

A: No. Further penalizing resources that are unavailable to the market because of a planned outage or catastrophic forced outage is not appropriate. Such events are certain to happen over time. However, reserve margins are constructed to include planned and forced outages, meaning that there should be ample capacity available despite an outage. Furthermore, additional penalties will force resources to consider such potential damages in their RRC auction bids, ultimately driving prices higher for consumers.

Q: WHAT IF THERE ARE NOT ENOUGH RESOURCES IN THE AUCTION TO CLEAR THE MARKET?

A: If the auction is unable to be completed due to an insufficient amount of resources to meet the demand projected by PJM, then, PJM should clearly communicate the results of the auction to the market, allow time for additional resources to qualify, and redo the auction in a timely manner.

Q: MR. BLEIWEIS NOTED THAT LSES CAN SELF-ARRANGE THEIR CAPACITY. PLEASE EXPLAIN WHY THIS IS IMPORTANT AND PROVIDE AN EXAMPLE HOW SELF-ARRANGEMENT WOULD WORK.

A: Ensuring that LSEs can self-arrange capacity to fulfill capacity obligations is important because it allows LSEs who own, or otherwise control, generation capacity the flexibility to hedge their capacity costs. While no LSE should be required to self-arrange, having this option available is a beneficial and non-discriminatory market construct for LSEs that own or control resources, including municipal utilities.

As Mr. Bleiweis described, the self-arranged capacity resources can be in the form of resource ownership, bilateral purchases, contracts for differences, or other purchases. Once entering the contract(s) for capacity, the LSE or the owner of the resource would bid into the RRC auction as a price taker by bidding the capacity at $0.00/kW-month. The auction would clear and, as a price taker, the LSE's self-arranged capacity would be among the resources chosen in the auction. As such, all self-arranged capacity resources chosen in the auction would have the same obligations and requirements of other resources chosen in the auction. At the time of the capacity obligation (*i.e.*, Year 3), LSEs would be charged for capacity based on their load ratio share. If the LSE's actual load ratio share is equal to the self-arranged capacity over the target year, the LSE will simply be "paying" itself for the capacity it had previously self-arranged.

To illustrate, consider an RRC auction with a clearing price of \$1.00/kW-month. Suppose "Maryland LSE Co." has previously self-arranged 100 MW of capacity from it's own 100 MW generating unit. Maryland LSE Co. bid the 100 MW generating unit into the RRC at \$0.00/kW-month. Since the unit was bid into the auctions a price taker, the unit was selected and will be paid at the \$1.00/kW-month clearing price. Further presume that during the target year, Maryland LSE Co.'s load and reserve obligations equaled the 100 MWs it self-arranged. Over the course of the target year it would pay the equivalent of \$1.00/kW-month for its capacity obligations as an LSE. As a resource selected in the RRC auction, Maryland LSE Co. would also be paid the equivalent of \$1.00/kW-month for providing capacity to the region. Hence, the self-arranging LSE is effectively hedged. Of course, LSEs will pay for any capacity needs above what they may have previously procured based on their load ratio share at the auction-clearing price. Conversely, LSEs will be paid for any capacity above what they need based on their load ratios share at the auction-clearing price.

Q: MR. BLEIWEIS DISCUSSES HOW THE PAYMENTS TO RESOURCES WOULD BE COLLECTED FROM CUSTOMERS UNDER THE RRC PROPOSAL. WHY IS IT IMPORTANT TO ALLOCATE THE PAYMENT ACROSS INDIVIDUAL MONTHS?

A: Allocating the capacity payments on a monthly basis to reflect the relative value of capacity is important because it provides the appropriate incentive to resources to make themselves available when they are most needed. In other words, because demand is generally highest in the summer months, capacity payments should normally be higher to reflect the increased demand. A reasonable quantitative method to accomplish this is to shape the annual price into a monthly payment in proportion to a Loss of Load Probability (“LOLP”) distribution. This will result in larger payments in peak months when the value of capacity is higher. The capacity payment is made to resources following the month for which the capacity was made available. The cost is allocated to LSEs based on their actual load ratio share of the region and is allocated commensurate to the value the capacity has at the time of the obligation. Mr. Bleiweis, in Exhibit C of his testimony, includes an illustration of the collection and distribution of funds using the LOLP approach.

Q: THE EXAMPLE IN EXHIBIT C OF MR. BLEIWEIS'S TESTIMONY SPREADS THE CAPACITY PAYMENTS ACROSS ALL TWELVE MONTHS OF THE YEAR. IS THIS A NECESSARY REQUIREMENT OF RRC?

A: No. If PJM determines via its LOLP analysis that only four months, for example, are critical for resource adequacy planning purposes, then the model can easily be adapted to spread the capacity payments over just four months rather than over all twelve months. In addition, PJM may determine that this results in more effective load resource participation.

Q: IN DISCUSSING RESOURCE ADEQUACY PROPOSALS, WHY IS THE TARGET YEAR SOMETIMES REFERED TO AS A COMMITMENT PERIOD?

A: When discussing resource adequacy the terms "target year" and "commitment period" are often used interchangeably. However, these terms are not the same and mean different things in terms of capacity procurement. As discussed earlier, long-term resource adequacy is based on future peak demand and seeks to determine whether enough resources are available to meet projected demand, as well as cover contingencies and load forecast inaccuracy that exist over a reasonable time frame in the future. It is unnecessary for reliability reasons to procure resources now, for years beyond the single target year (such as Year 3 in Reliant's RRC proposal). If in fact resources were procured for a longer period of time than the target year, say a three-year commitment period, PJM would be making capacity commitments today for a period as far as five years into the future. If it only takes three years to build a new resource to meet the reliability needs of PJM, there is no need to procure for a time period several years beyond the time frame that actual entry decisions need to be made.

Additionally, procuring resources beyond a single target year requires a longer-term load forecast. Load forecasting three years forward is already a difficult charge, but forecasting up to five years out and making financial commitments for longer periods of time requires consumers to bear an unreasonable amount of risk. The resulting load may be significantly lower than that forecasted and thus an over commitment of resources would have been made if a multi-year commitment period is used. This could result in several years of capacity payments that are unnecessary from a reliability standpoint, which in turn could create additional stranded costs.

Q: WHY ARE RESOURCES CHOSEN IN THE RRC AUCTION PAID THE AUCTION-CLEARING PRICE INSTEAD OF THE PRICE THE INDIVIDUAL RESOURCE BID?

A: Since creating inefficiencies in any market tends to lead to greater costs, the RRC model is designed to provide the most economically efficient means of assuring resource adequacy by producing a single market-clearing price for resources on a three-year forward basis. Since a single price auction reflects the price at which the market values all the resources necessary to fulfill a projected level of demand inefficiencies are reduced. Paying resources on an as-bid basis on the other hand tends to create inefficiencies in the market. For example, bidders whom normally would be price takers are forced to bid what they think the clearing price will be rather than simply bidding in their capacity at $0.00/kW-month as a price taker in a single-clearing price market would bid.

Q: DOES THE RRC MODEL WORK IN CONCERT WITH COMPETITIVE RETAIL MARKETS?

A: Yes. The total annual cost to market participants is known well in advance (*i.e.*, 3 years), such that an LSE can include an estimate of its capacity costs in its retail price offers for its customers. Furthermore, as described above, an LSE may hedge its capacity costs any number of years into the future by self-arranging all or a portion of its expected load via bilateral contracts. Also, the model accommodates load-shifting concerns associated with retail competition because the cost of resource adequacy to the LSE is based on actual load ratio share usage, thus there is no requirement for an LSE to be able to accurately forecast their load three years in the future in order to know the price that they will be paying in that year. Furthermore, the RRC will produce less volatile energy prices while maintaining appropriate price signals to promote maintenance and construction of generation and load participation.

Q: DOES THE RRC MODEL WORK IN CONCERT WITH MARKET POWER MITIGATION PLANS?

A: Yes. A three-year forward period is sufficiently long to allow participation in the market by both existing and planned generation, therefore eliminating barriers to entry and the need for price mitigation in the capacity market. The Independent Market Monitor would continue to monitor for potential flaws in the resource adequacy market.

Q: IS THE RRC AUCTION PROPOSAL CONSISTENT WITH MACRUC'S GENERAL PRINCIPLES TO GUIDE REGIONAL EXPLORATION OF NEW CAPACITY MECHANISMS?

A: Yes. In MACRUC's January 10, 2003 comments to FERC on Standard Market Design, MACRUC members, including the then-sitting Commissioners of this Commission, suggested six principles to guide the regional exploration of new capacity mechanisms designed to provide resource adequacy. A copy of MACRUC's comments is attached as Exhibit A. With the exception of the mechanism used in Principle Number 5 below, the RRC auction would meet MACRUC's stated principles set forth in Exhibit A, pp. 40-41, including the following:

> 1. A recognition that capacity resources may be offered through generation or demand response and that such resources

> should primarily be offered and obtained on a long-term, forward-looking basis through a combination of self-ownership, bilateral contracts, and auction markets.

Reliant's RRC auction proposal, as I have explained, responds to market demand by providing a three-year forward-looking auction that works in combination with self-ownership and bilateral contracts.

> 2. Market based pricing of capacity, rather than administratively or regulatory-based rate determination.

The auction process enables the market to set the price of capacity without the need for rate caps or other regulatory devices.

> 3. Adequate assurances that market power and gaming attempts will be deterred, or else rapidly detected, corrected, and reversed, accomplished by provisions that ensure that the market monitor has the necessary tools to forestall or reverse such attempts, and that such attempts will be promptly reported to the FERC Office of Market Oversight and Investigation.

The three-year, forward-looking auction process would make it difficult for parties to game the system. Nevertheless, because PJM would continue to serve as market monitor, it could ensure against gaming and market power abuse. As I explain above, if a resource violates the market rule, PJM can report the violation to FERC or file a complaint.

> 4. RTOS/ITPs should have both legal and physical rights to compel committed reserves to act in accordance with their commitments (i.e., to provide capacity resources to the system). Reliance on third party contract enforcement is not sufficient.

As I indicate above, the auction process would compel all LSEs to procure sufficient capacity to meet peak load and would require resources selected in the auction to bid their capacity into the market in the target year. PJM will be able to enforce performance or seek assistance from FERC.

> 5. Financial incentives and penalties as well as ITP enforcement powers which align the financial and operational interests of capacity holders with the reliability interests of the system, and which encourage owners of capacity or demand responsive resources to efficiently operate, maintain, and schedule facilities in a way which makes such resources available to load when needed.

As I previously mentioned, if the resource fails to comply with the capacity obligation when called upon, it will not receive the RRC capacity payment for the period of time it is not committed to the market. Furthermore, the penalties that FERC would impose on any resource that acts inconsistently with the market rules will provide the appropriate incentive for resources to operate efficiently and provide load when needed.

> 6. Penalty or deficiency rates that approximate the costs imposed on other stakeholders for non-compliance, with penalty or deficiency revenues distributed in a way that encourages capacity resource performance and discourages gaming or market power abuse by sellers and buyers of capacity.

Although Reliant does not propose that PJM impose additional penalties, PJM and FERC have ample tools to address non-compliance, as I have explained above.

Q: WHAT SHOULD THE MARYLAND COMMISSION DO TO ENSURE RESOURCE ADEQUACY IN PJM?

A: The Maryland Public Service Commission can best address this issue by adopting the RRC as its preferred methodology and support the RRC at the various regional stakeholder proceedings.

V. THE CURRENT PJM CAPACITY MARKET DESIGN IS FLAWED

Q: SHOULD RESOURCE ADEQUACY BE A PRESSING CONCERN IN THE PJM REGION?

A: Yes. As described by Mr. Bleiweis, the current capacity market results in the volatile "boom-and-bust" cycle. It is important to remedy this approach with a resource adequacy design that successfully supports long-term sustainable markets. This means that a resource adequacy model must be sufficiently forward-looking, eliminate the need for price capping in the capacity market, and provide price certainty. Reliant's RRC proposal accomplishes this goal.

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes.